

**INSTRUCTION MANUAL**  
**MODEL 651 FM TUNER**  
**INSTALLATION AND OPERATION INSTRUCTIONS**

Model 651 is a Hi Fidelity semi-fixed-frequency FM tuner designed for operation with FM wireless microphones or electric guitar transmitters using the 88-108 mc band. It may also be used as a single frequency FM music tuner for installations in hotels, motels, apartment houses, or commercial buildings. The Tuner employs a center scale meter for indication of precise tuning, and is supplied with a plug-in vertical antenna.

**UNPACKING**

The unit is to be removed carefully from the carton and inspected for any possible damage in transit. If there is any evidence of any damage which might have occurred in shipment, notify your dealer at once, or the transportation company which delivered it. Claims for damage sustained in transit must be made upon the Carrier. Save all packing material for inspection by the claim agent who will furnish you with the proper forms and will also give you the necessary instructions for filing a claim. In addition to the Unit, there should be included in the carton the following:

1. INSTRUCTION BOOKLET
2. WARRANTY CARD

To insure proper servicing and to protect your rights under the warranty, be sure to fill in the warranty registration card without delay and mail to the factory.

**WARRANTY**

This unit has been very carefully inspected and tested at the factory and normally should require no service other than a semi-annual check of the tubes. Each unit is warranted to be free from defects in material and workmanship under normal use and service for a period of 90 days from date of delivery to the original purchaser. If any unit appears to be defective, the factory will repair any unit returned within said 90 days, providing all transportation charges are pre-paid, and which our examination shall disclose to our satisfaction to be defective.

This Warranty does not include free labor, nor is it applicable to any unit which shall have been subject to accident, tampered with, mis-used, abused, or altered in any manner whatsoever. Further, this Warranty shall not apply to any unit which has been connected improperly.

It is recommended that any Tuner on which service is required, be processed through your dealer wherever possible.

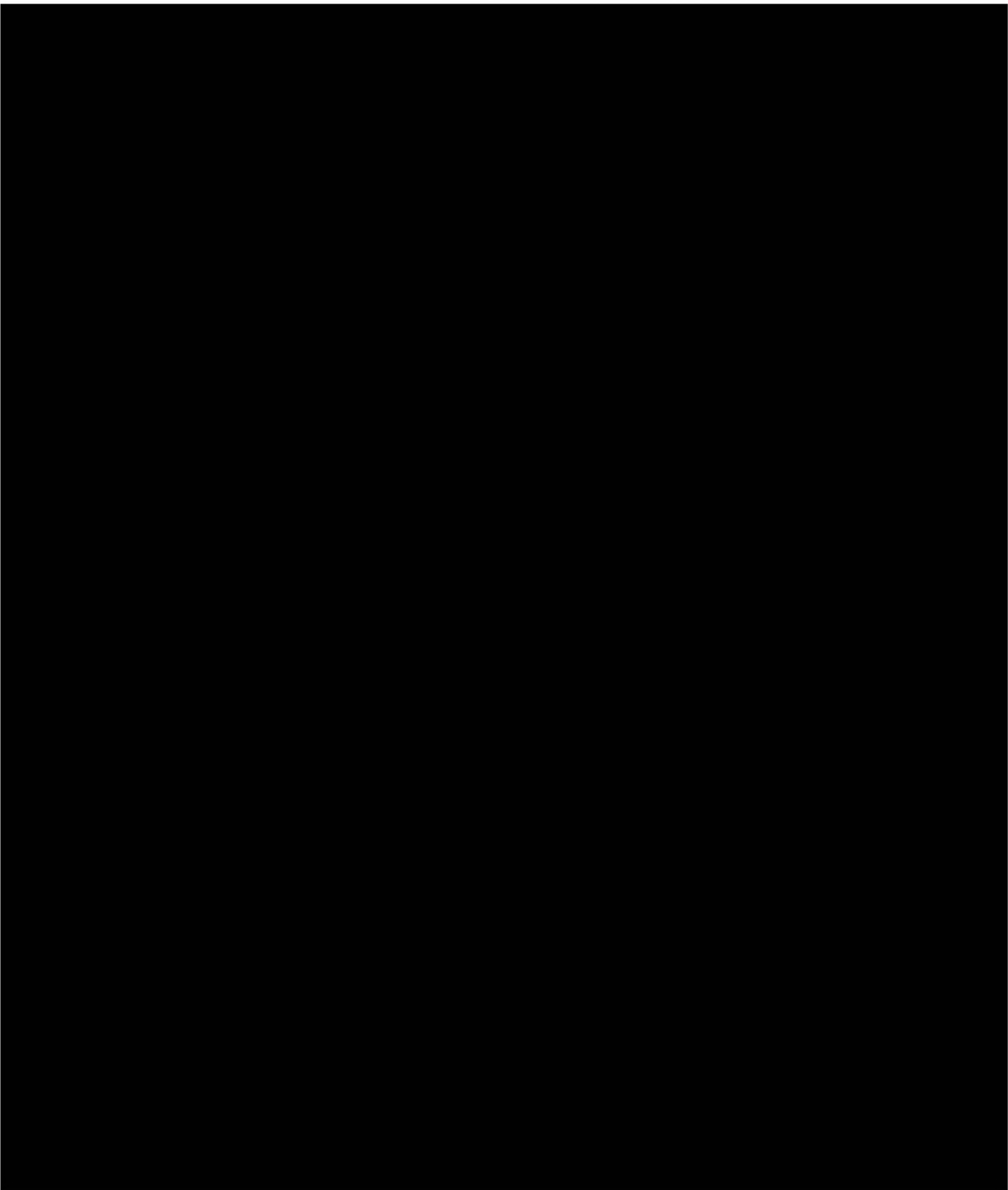
This Warranty is expressly in lieu of all other Warranties, expressed or implied, and of all other obligations or liabilities on our part. We neither assume nor authorize any other person to assume for us any other liability in connection with the products manufactured by Trutone Electronics, Inc.

**INSTALLATION:**

Because of its attractive appearance, the Tuner may be placed on a table or a bookshelf. If installed in a cabinet, the cover is to be removed, and ample ventilation must be allowed. Model 651 Tuner is designed to operate on a 110 to 120 volt, 60 cycle A.C. line.

**TRUTONE ELECTRONICS, INC.**

14660 Raymer St. • Van Nuys, Calif.



## CONNECTIONS

The output jacks are located on the left side of the cabinet. Output Jack #1 is used to connect Model 651 to the amplifier when the Tuner is used as an FM broadcast tuner. Output Jack #2 is used to connect Model 651 to the amplifier when the Tuner is used with a wireless microphone or wireless musical instrument.

The Tuner is supplied with a plug-in vertical antenna. When it is desired to use an external antenna, unplug the vertical antenna and connect the lead-in from the external antenna to the 72 or 300 ohm connections at the rear of the tuner chassis. "Flatline" cable normally has an impedance of 300 ohms and should be connected to the 300 ohm antenna terminal. Coaxial cable usually has an impedance of 72 ohms and should be connected to the 72 ohm antenna terminal.

## ADJUSTMENTS

**WHEN USED WITH WIRELESS MICROPHONES OR WIRELESS MUSICAL INSTRUMENTS:** Set both the Squelch and AFC switches to "off" position. Adjust tuner frequency with a screwdriver through the hole on the right side of tuner to a frequency not used by a local broadcasting station, preferably on the low frequency side. Turn on the microphone transmitter and adjust its frequency to where it is heard in the amplifier's speaker. While observing the tuning meter on the front panel of the Tuner, rock the tuning adjustment with the screwdriver so that the meter needle swings from left to right. Position the meter needle to center scale. Return the AFC and Squelch switches to "on" position. When the AFC switch is placed in the "on" position, the indicator light above the AFC switch will glow, thereby indicating that the tuner is ready for operation.

The Squelch adjustment is located behind the front panel and is accessible through a hole in the panel at the left of the tuning meter. The squelch adjustment is pre-set at the factory. If additional adjustment is required, set the Squelch switch to the "on" position. Turn off the transmitter, and adjust the squelch control with a small screwdriver through the hole on the front panel at the left side of the meter. Turn the screw clockwise until the background noise is apparent, then slowly turn the screw counter-clockwise until the noise just drops out.

**WHEN USED AS FM MUSIC TUNER:** Set both the Squelch and AFC switches to "off" position. Adjust tuner frequency with a screwdriver through the hole on the right side of Tuner to the frequency of the desired station. While observing the tuning meter on the front panel of the Tuner, rock the tuning adjustment with the screwdriver so that the meter needle swings from left to right. Position the meter needle to center scale. Return the AFC and Squelch switches to "on" position. When the AFC switch is placed in the "on" position, the indicator light above the AFC switch will glow, thereby indicating that the Tuner is ready for operation.

## OPERATION

On the front of the panel are three operating controls. The slide switch at the lower left is used to turn the power on and off. The slide switch at the upper left is used to disable the "Squelch" circuitry especially during the testing and tuning process. The slide switch at the lower right is used to disable the AFC circuitry also during the testing and tuning process. Tuning is accomplished by means of a screwdriver at the right side of the tuner cabinet.

The operating noise-free range of Model 651 is dependent on the wireless microphone transmitter with which the Tuner is to be used. Good operation may be accomplished up to 50 feet and more subject to terrain, obstacles, metal objects, electrical interference, etc. The range may be extended by substituting an external FM antenna for the vertical antenna on the Tuner.

When the microphone is located too close to the speakers, an audio-howl may be experienced. To eliminate this feedback it is necessary to operate the microphone at a safe distance from the speakers or to reduce the volume at the amplifier.

The function of the squelch circuitry is to eliminate the sudden background noise that appears when the wireless microphone is turned off or when it is used beyond the functional range.

The AFC circuitry is designed so that the tuner will lock on the transmitter frequency to avoid the possibility of drift. The tuning meter should be at center scale for optimum performance.

## CAUTION

This unit is provided with a 1/2 ampere fuse for the protection of the components used in the circuitry. If the fuse should blow, replace it with one of identical amperage and under no circumstances with one of greater amperage. If the fuse continues to blow, return the Tuner to the factory for warranty repair or replacement.